CLAIMS

1. A method of calculating an index indicative of anaesthetic depth, the method comprising subjecting a patient to a repetitive audio stimulus, monitoring auditory evoked potentials (AEP) produced by the patient, and providing a signal corresponding to the coarseness of the monitored AEP signal, and using said signal as said index indicative of anaesthetic depth.

2. A method as claimed in claim 1 wherein the monitored or raw AEP signal is divided into a series of sweeps or frames of a given duration, each sweep being synchronised with the repetitive audio stimulus.

3. A method as claimed in claim 2 wherein a number of sweeps n are recorded in sequence and are averaged to produce a time averaged sweep and for the time averaged sweep the anaesthesia index is calculated.

4. A method as claimed in claim 3 wherein each time a new series of sweeps is recorded, a new time averaged sweep is determined from the most recent n sweeps and the anaesthesia index for that time averaged sweep calculated.

5. A method as claimed in any preceding claim wherein the raw AEP signal is sampled at regular intervals to produce a digitised AEP signal.

6. A method as claimed in any preceding claim wherein an indication of coarseness is obtained by measuring the differences between neighbouring sample points.

7. A method as claimed in claim 6 wherein for a moving time averaged sweep this measure is a function of the sum of the square roots of the difference between every two adjacent sample points in the time averaged sweep.

8. A method of maintaining closed-loop control of an anaesthesia depth, the method comprising supplying a dosage of anaesthetic to a patient, calculating an anaesthetic depth index according to the above first aspect of the present invention, and using the value of the anaesthetic depth index to regulate the anaesthetic

supply to maintain the anaesthesia depth index at or near a predetermined level.

9. A system for calculating an index of anaesthetic depth, the system comprising a signal generator for subjecting a patient to a repetitive audio stimulus, electroencephalographic (EEG) recording means for coupling to said patient for recording auditory evoked potential (AEP) signal from the patient, and computer means for receiving said AEP signal, and for processing said AEP signals and generating an index signal indicative of the coarseness of the recorded AEP signal, said index signal being representative of the depth of anaesthesia.

10. An anaesthetic supply control system including a system for calculating an index of anaesthetic depth for a patient as claimed in claim 9 including anaesthetic supply means and a regulator for receiving said input signal, said regulator having received a predetermined anaesthetic depth index and said regulator comparing said index signal and said predetermined signal and providing a control signal to said anaesthetic supply means for regulating the supply of anaesthetic to the patient to maintain the anaesthetic depth index at a predetermined level.